IN THE SPECIFICATION:

Please replace the paragraph at page 15, line 13 through page 16, line 12 with the following amended paragraph:

In each pixel 6, the photoelectric conversion element 11 is connected to the signal output circuit 3 through a bias line 12 which is common to all the pixels. Thus, a constant bias voltage is applied from the signal output circuit 3 to the photoelectric conversion element 11. In addition, two gate lines 13a and 13b which are common to every row in the matrix are provided for each pixel 6. Here, a gate electrode of the TFT 21 is connected to the scanning circuit 2 through the gate line 13a and a corresponding one of the ICs 4 (not shown), and a gate electrode of the TFT 23 is connected to the scanning circuit 2 through the gate line 13b and the corresponding one of the ICs 4 (not shown). Thus, the scanning circuit 2 controls operations (turn-ON/turn-OFF) of the TFTs 21 and 23[[(22)]]. Moreover, two signal reading wirings (signal lines) 14a and 14b which are common to every column in the matrix are provided for each pixel 6. Here, a source or drain electrode of the TFT 21 is connected to the signal output circuit 3 through the signal line 14a and corresponding one of the ICs 5, and a source or drain electrode of the TFT 22 is connected to the signal output circuit 3 through the signal line 14b and the corresponding one of the ICs 5. Thus, in each pixel 6, any one of the signal lines 14a and 14b is freely selectable in reading out a signal therefrom.

Please replace the paragraph at page 19, lines 2-18 with the following amended paragraph:

--The noises which are generated when no electric charge amplification is carried

out within the pixel 6 depend on a kTC1 noise (k being a Boltzmann constant and T being an absolute temperature), a resistance noise (Rs1) of the signal line 14a, a parasitic capacity noise of the signal line 14a, and a noise of the amplifier 15a (including the gain switching circuit 17). On the other hand, the noises which are generated when the electric charge amplification is carried out within the pixel 6 using the TFT 22 as the source follower circuit depend on the kTC1 noise, and a noise of the source follower circuit. At this time, the noise of the source follower circuit is very low in level. That is, higher sensitivity (S/N ratio) is obtained when the electric charge amplification is carried out within the pixel 6 using the source follower circuit rather than when no electric charge amplification is carried out within the pixel 6.--

Please replace the paragraph at page 20, lines 16-25 with the following amended paragraph:

--In this case, the signal line 14a is selected in a manner as will be described below, and no electric charge amplification is carried out within the pixel 6, and an output signal of the pixel 6 is read out through the signal line 14a. Here, a capacity of the photoelectric conversion element 11 is assigned C_1, a parasitic capacity of the signal line 14a is assigned C_2, and a capacity determined by capacities of the capacitors Cf_1, Cf_2, and Cf_3 of the amplifier 15a is assigned Cf. Point B indicates a position on the signal line 14a corresponding to the point C on the signal line 14b.--

Please replace the paragraph at page 21, line 26 through page 22, line 5 with the following amended paragraph:

--In this case, the signal line 14b is selected in a manner as will be described below, and the electric charge amplification is carried out within the pixel 6 to read out an output signal of the pixel 6 through the signal line 14b. Here, a threshold voltage of the TFT 22 as the source follower circuit is assigned Vth. A resistance (Rs2) is provided on the signal line 14b, and the parasitic capacitance of the signal line 14b is given by C2'.--

Please replace the paragraph at page 24, lines 1-16 with the following amended paragraph:

--Note that while in this embodiment, a photoelectric conversion element of a MIS type (metal insulator semiconductor) is adopted as the photoelectric conversion element 11, even when a photoelectric conversion element of a PIN type (i.e., having a p-type semiconductor layer, an i-type semiconductor layer and an n-type semiconductor layer formed on a substrate) is adopted, the same effects can be obtained. Moreover, in this embodiment, there has been exemplified the indirect type radiation image pick-up device in which the radiation is converted into the visible light in the phosphor layer 215, and the resultant visible light is converted into the electric charges in the photoelectric conversion element 11. However, even when the present invention is applied to a direct type radiation image pick-up device, using a material such as amorphous selenium, in which the radiation can be directly converted into the electric charges, the same effects can be obtained.